thereafter used for the recording processing of the actual recording information Sr.

After a series of the calibration processing shown in FIG. 3 is finished, the number of a sector used as the recorded area and the recording power set in the above are recorded within the setting recording area corresponding to the RMA12.

The retrieval processing from Step S2 to Step S10 will be described by using FIG. 4

In the retrieval processing, as illustrated in FIG. 4, at first, the setting recording area where the used (recorded) sector number and the setting recording power are recorded in the last calibration processing is retrieved, so to obtain the used (recorded) sector number (address at the head position of the used area (Step S20), and the position of irradiating the optical beam B is moved to the head position (Step S21).

While the irradiation position is moved outwardly from the head position, whether a detected signal Srf having some level is detected or not is checked (Step S22).

The irradiation position is inwardly jumped to a position for two tracks in a way of skipping over 64 sectors (Step S23), referring to the address information recorded by the pre-pit from the first position of detecting the detected signal Srf, and while moving the irradiation position again outwardly from the moved position, whether the detected signal Srf is detected or not is checked and retrieved(Step S24).

When detecting the detected signal Srf having some level (YES; Step S24), the current irradiation position is regarded to be within the

used (recorded) area, the address of the position is obtained (Step S25) and this step will return to Step 23, where the above-mentioned track jump processing will be repeated.

While, in the judge of Step S24, when no detected signal Srf is detected (NO; Step S24), whether or not the check and retrieval has been completed in the irradiation position before the track jump (Step S23) is checked (Step S26). When the check and retrieval has not been completed (NO; Step S26), this step will return to Step S24 again, where the check and retrieval is continued, while when the check and retrieval has been completed (YES; Step S26), the position corresponding to the last obtained address (Step S25) is regarded as the head position the used (recorded) area (Step S27), and then the processing will be returned to Step S3 or Step S11.

As mentioned above, according to the above calibration processing in the information recording unit R, the non-used area is retrieved, referring to the special detected signal SP, to record the mark signal and the setting signal, and the setting of the recording power is performed, using thus recorded setting signal. Therefore, the non-used area can be retrieved accurately and by using this, the setting of the recording power can be performed accurately.

Since the mark signal is recorded at the position detected prior to the setting signal, the first detected position can be accurately detected in the PCA18, thereby detecting the non-used area assuredly.

Since the mark signal is recorded in every 32 sectors during recording of the setting signal, detection error of the non-used area caused by detecting no special detected signal SP for a long time can be prevented.

Since the used (recorded) area is detected based on the special detected signal SP while repeating the transition of the irradiation position of the optical beam B from the head position of the used (recorded) area indicated by the RMA 12 to the position of detecting the detected signal Srf and the update of the same head position, the non-used area can be detected assuredly.

Since the information recording is executed by using the set recording power, the information recording can be executed accurately and assuredly by using the accurately-set recording power.

In the above-mentioned embodiment, although the description has been made in the case of one calibration processing by use of 64 sectors, the same effect as the present invention can be obtained even in the case of one calibration processing by use of only one sector 20, if the mark signal is recorded at the head.

In the above-mentioned embodiment, although the description has been made in the case where the present invention is adopted to the calibration processing of the recording power on the DVD-R1, the present invention can be adopted to the calibration processing of the recording power on a general CD-R (CD-Recordable).

Further, with a program corresponding to the flow charts shown in FIG. 3 and FIG. 4 recorded in a flexible disk or a hard disk as the information recording medium, this program can be read out and executed by a general microcomputer or the like. Therefore, the same microcomputer may be used as the control section 4 of the embodiment.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof.